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ABSTRACT

Focusing on the change process, this document presents five papers given at a regional EPDA inservice education program. Papers included are (1) Underlying Dimensions of the Change Process, by William Hull, which presents guidelines for planned change: (2) Alternative Organizations for Producing Innovation, by Daniel Koble, which describes participative decision making as it relates to alternative organization structures for the identification and selection of innovations in vocational education: (3) Techniques for Influencing Others to Accept Change, by William Hull, which discusses types of techniques that may be used to propose changes in vocational education: (4) Strategies for Funding Innovative Projects, by Daniel Koble, discussing the allocation, dispersement, and use of vocational education funds to produce program innovation: and (5) Statewide Diffusion Networks: Their Establishment and Evaluation, by Earl Russell and N.L. McCaslin, focusing on the concept of statewide diffusion networks as encompassing any new product, idea, practice or program showing promise for improvement in vocational education. (LRA)

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SELECTED PAPERS

ON

THE CHANGE PROCESS

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Presented
at the
EPDA Regional Inservice Education Program

Developing Change-Agent Competencies
In Administrators of Vocational Education
Atlanta, Georgia
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Prepared for
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By
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SECTION I

UNDERLYING DIMENSIONS OF THE CHANGE PROCESS

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> The need to slough off the outworn old to make possible the productive new is universal. It is reasonably certain that we would still have stagecoaches--nationalized, to be sure, heavily subsidized, and with a fantastic research program to "retrain the horse"--had there been ministries of transportation around in 1825.[1]

This wry comment emphasizes the need for planned change. This need is particularly acute in a society where knowledge information is doubling every 15 to 20 years and conditions for vocational education are dynamic and unstable. Supervisors of vocational education recognize the tendency towards "hardening of the arteries" in institutions as well as individuals. A natural reaction to change--particularly change which is imposed from the outside--is to stand fast and hold firm on traditional ways of doing things which have stood the test of time. But is this the right attitude to have towards new ideas? Can we move forward with bold initiatives without risking some of our traditional values and patterns of operation?

It is our purpose today to help you answer these questions and provide some suggestions for alternative ways to implement innovations. The information provided in this paper must of necessity be somewhat general since we do not know the specific problems you are facing in your state. The small group synthesizing exercises in this section and other sections should provide an opportunity for each person to apply the concepts presented to situations back home. The exercises are hypothetical; in no way do they relate to any real life person, place, or event.

This presentation presumes, in part, an identification of needs for change in your home state. This need may relate to a product such as an instructional material, or it may be an enabling procedure which needs to be implemented. An example of a procedure is the use of ad hoc committees to incorporate elements of vocational education into career education. Whatever the need in your home state, this part of the program is designed to help you determine the strategy for resolving the need in your state.

Domains of Knowledge

What information do you need to know in order to manage your time and other resources in your position as a state leader of vocational education? Fortunately, your need is to develop a way of perceiving new ideas rather than possession of isolated bits of information for resolving all possible problems in vocational education. We are inviting your attention to three elements in the formulation of effective problem-resolving strategies. They are: the product (the idea you have in mind to resolve the problem), the client (the person

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or persons who must accept the idea before it can be implemented), and the advocate (in this case, you or the person who is initiating the action taken).[2]

The model I am discussing assumes that the advocate has the initiative in proposing actions to be taken. These proposals may be directed to his superiors in the administrative structure as well as subordinates. The model assumes resistance from status quo forces or others who have something to lose by accepting the new idea. Therefore, you can expect interaction to take place between the advocate and the client in somewhat of a negotiation frame of reference. That is, activities will take place within a time frame which constitutes a response to the initial actions of the advocate. This response from the client will elicit a response from the advocate and so forth. It is important to recognize the incremental nature of this interaction. In fact, your ability to analyze your change situation will be increased if you can adopt an incremental frame of reference. Most situations are dynamic; in order to understand your situation, you must--as it were--suspend action to record and interpret the events around you.[3] This requires an ability to be objective in judgements about the adoption situation.

The Product. The identification and selection of an innovation to resolve a problem in a local education agency, a teacher education agency, or a state department of education, is unique to the particular set of circumstances which created the need for change. For example, the need for more teachers of business education can only be resolved by developing means for preparing and certifying more teachers. This need would not be helped by reorganizing the state department! Much of the procedure for identifying the problem and generating the statement of need has been discussed by the previous speakers on needs assessment. Therefore, we will focus on characteristics of the product which should be considered when selecting an innovation to resolve the previously identified problem.

It is important to give the benefits of a product prime consideration. You can install an inexpensive product and not improve your situation. Unless you have information which leads you to believe the innovation will move you toward resolving the problem which has been identified, you have little reason for pursuing the use of the product.

One of the most important aspects of product benefits is its effect on students. Typically, teachers and others in education react positively toward new ideas which improve student learning. Of course, the improvement of program operations, such as making them more effective and efficient is always welcome. The product must have credibility with your client. It is desirable to assemble as much evidence on the past performance of the product in similar situations as possible. Everett Rogers has synthesized from the literature five characteristics of innovations:

1. Relative advantage - the product being considered is better than current practice.
2. Compatability - the product is consistent with existing situations.
3. Complexity - the product is not complex; it can be divided into separate parts.
4. Trialability - the parts of the product can be tried separately.

5. Observability - you can determine the effects of the products easily.[4]

Remember, the important aspect of the innovation to consider is the probability of resolving the problem, not its ease of installation! Compatability with the existing situation and reduced complexity of the product will reduce potential resistance to trial use of the innovation but such characteristics may not contribute to the resolution of the problem.

Costs are an important consideration when selecting a solution to a problem. They are important because many of the costs are hidden; retraining of staff, the lead time it takes to install the product, the disruption created in the operations by introducing a new product, etc. Many of these costs can be minimized by careful planning and installation. Once a product has been selected, the installation process should be carefully devised to reduce the cost of disruption as much as possible.

Sometimes new programs contain provisions for matching funds and dollars from sources other than the adopting organization. Dollars can be used as incentives for bringing about change if procedures are specified for continuing the program after outside monies are depleted. So often, a program reverts to old procedures once the sponsor's funds are gone. The fourth section of this paper addresses some of the problems of funding and continuing innovative programs.

The Client. The client represents the individual or individuals who must accept the product before it can be installed. The client becomes the target audience for communication and activities designed to bring about change in the system. There are gatekeepers, such as the building principal, who may reject the use of the product even on a trial basis. You must at least neutralize the reactions of individuals opposing the product if it is to be installed. The persons in authority in an educational system, e.g. the state director of vocational education, or the superintendent of schools in a local education agency, must be consulted prior to any major change affecting their educational program responsibilities. This is true for changes originating within the system as well as for changes coming from sources outside of the educational agency. Lines of authority and responsibility should be respected.

Respecting the authority of positions within the organization presents difficulties whenever structural changes are involved in installing the product. A structural change such as reorganization of state departments frequently abolishes positions and realigns responsibilities of staff members. It is unrealistic to expect a client to be enthusiastic about a change which will abolish his position or reduce his status or authority in the organization.

Any organization functions within a set of norms and expectations for performance of tasks. An advocate which seeks to change such attitudes should recognize the enormity of the task awaiting him. Attitudes towards change and innovations are deep seated; they evolve over time as part of a coping strategy for performing and surviving in an educational organization.

Organizations as well as individuals have histories of dealing with innovative products. Some organizations exemplify positive, agressive climates towards change while others tend to stand off and adopt new ideas only after they have been tried by others. A state supervisor in the process of selecting local education agencies for trying out a new idea should be cognizant of these

different postures toward innovation. There is some evidence that the selection of so called "light house" schools to influence others is only partially effective. Our impression is that these schools tend to influence similar schools, but schools in other circumstances tend to ignore the demonstrated effectiveness of the product because the conditions of the host school are different.

The use of opinion leaders among teachers and others expected to try out the new product appears to be a good idea. An opinion leader is someone respected by others in the organization. Sometimes you can ask for volunteers to try a product and obtain some opinion leaders in this manner; but more often, a knowledgeable informant should identify the person to be invited to use the product in an experimental setting.

The Advocate. One of the most powerful concepts associated with the selection and use of a new product is the concept of advocacy! It is unrealistic to expect a new product to sell itself. The advertisers of commercial products have known this for years. Why do educators shrink from the task of advocating products to schools and the public?

We can understand the natural reluctance of state departments of education personnel to advocate specific products for use in school systems. The principle of local control is important and should be respected. However, you, as state leaders in education have a responsibility to promote and encourage the best vocational education possible. We believe this suggests the need to provide local schools with lists of alternative products to meet specified needs. Some of these needs, such as the number of students graduated to fill vacancies for vocational positions can be determined at the state level.

As state leaders in vocational education you can choose simply to convey information to local school administrators and teachers and let them decide on their own what they will do with it. Or you can be more affirmative by conducting workshops and educating your clients to the advantages and disadvantages of choosing certain alternatives. Some states use small amounts of funds to "prime the pump" for changes in school districts. This tactic should be used carefully to insure the change has a reasonable chance of survival after the funds are gone.

The previous sections have summarized three elements perceived to be necessary to the selection and use of products in educational agencies:

1. An understanding of the product,

2. A knowledge of the client, and

3. An awareness of the limits and responsibilities associated with the role of the advocate.

Each element may be perceived somewhat differently by the individuals affected by proposed changes. Some individuals within the educational organization will have their roles enhanced and others will have their roles diminished with the installation of specified changes. The need for you to be sensitive to the interpersonal dynamics associated with change and innovation cannot be overstated.

Guidelines for Planned Change

In order to aid you in the identification and selection of change strategies, we are listing some general questions which do not apply to every specific situation but which are generally applicable to many different situations:

1. Do you have a proposed solution (product) which is sufficiently precise to allow careful study of its consequences? If not, then it's back to the drawing board for the solution. Without detailed information on the product, it is unlikely the discussion of its merits would allow insightful comments on its merits for installation.

2. Do you have evidence of the successful use of the products in situations similar to the problem-situation under consideration? Technical information on the performance of most products is difficult to obtain. Nevertheless, the presence of positive, objective data on product performance is the best rational argument which can be presented in favor of the product-solution.

3. Has the product been legitimized by those who must approve its use in the educational agency? Before the installation of a new product can proceed, the chief administrator must express his approval of the product. This approval may be conditional and limited in nature, but this approval is essential to the allocation of resources (time and money) which is associated with the use of products in educational agencies.

4. Do you have pledges of technical assistance with the product from the developing agency? If the product has been initiated within the school system, this may involve only the release of staff time to further develop and install the new idea. Outside help may be brought in on a consultative basis as needed. It is desirable to insure access to this assistance in advance of the agreement to try out the product.

5. Do the potential users of the product clearly perceive its advantages over the existing situation? If not, then mount a campaign to influence the acceptance of the product. Use informational tactics which appeal to the rational nature of the client. Mildly persuasive techniques can be used as they are appropriate. Use coercive techniques sparingly to convince clients of the need for the product.

6. Does the product accomodate existing conditions whenever possible? Advocates should make an effort to show how the proposed change is complementary to the existing situation whenever possible. Innovators need friends! Try not to antagonize or alienate the clients you are trying to serve.

7. Were the persons affected by the change involved in the decision to try it? Often this is not the case, and hard feelings are generated. The administrator is accused of "jamming something down our throats" without due consideration of the clients feelings. All of us want to feel important. You make the client feel important when you invite his participation in the consideration of an innovative product.

8. Does the strategy for change include incentives for product use? Frequently monetary rewards such as promotions for specific individuals or public recognition of their service to the organization can become part of

the strategy for change. Personal recognition can sometimes overcome reluctance of clients to consider alternatives to the present way of doing things. A strategy for change can include the cultivation of peer expectations for the product. Some lead time may be necessary if deep seated values are being changed.

9. Does the strategy have potential for overcoming barriers to change? One of the most frequent barriers to change is the feeling of ownership and pride in local products. Clients will sometimes be willing to spend more time adapting the product to local conditions if they can feel a sense of ownership at the conclusion of the project. Another important feature of any change strategy should be a comparison of the opportunity cost involved in not accepting the product. In other words, what would it cost the educational agency not to use the product? It may be difficult to measure lost opportunities in education, but it remains a factor to consider when promoting an innovative product.

10. Does the strategy have a time table? An effective installation strategy for a product usually means efficient use of time. Any advocate should be prepared to propose a schedule of activities and due dates for the accomplishment of selected objectives. This time table may change, but the existence of a concrete proposal can sometimes facilitate the rapid consideration of a product.

These guidelines should be used in the selection of a product and formulation of an installation strategy. They are applicable to the synthesizing exercises in this section of the paper.

REFERENCES

[1]Peter F. Drucker, The Effective Executive (N.Y.: Harper and Row, 1967), p. 108.

[2]Much of this information has been taken from A Conceptual Framework for the Diffusion of Innovations in Vocational and Technical Education. The Center for Vocational Education, The Ohio State University, Columbus, Ohio, March 1973. ED 079 468

[3]The Center for Vocational Education is developing a Career Education Product Installation Handbook which suggests seven steps for formulating an installation strategy. We anticipate this product will be released by the National Institute of Education this fall.

[4]These characteristics of innovations are discussed in the book by Everett M. Rogers and F. Floyd Shoemaker, Communications of Innovations: A Cross-Cultural Approach (N.Y.: The Free Press, 1971)

SECTION II

Alternative Organizations for Producing Innovation

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(In this section participative decision making will be discussed as it relates to alternative organizational structures for the identification and selection of innovations in vocational education. The implications of organizational arrangements to produce desired interface with agencies and institutions who are concerned with the delivery of manpower at the state and local levels will be emphasized.)

Introduction

Most vocational educators can readily agree that not all change is necessarily "innovative" or "good." (Innovation is meant here to be the introduction of something new.") This is basically true because "innovations" can come from two sources: (1) those which stem from sources which are "internal" to the organization or system, and (2) those which are originated "external" to the organization or system. Each of these activities must be studied in an organized manner and each calls for the making of appropriate decisions for reacting in the most effective and efficient manner.

Dealing with this innovative process in a systematic and orderly fashion calls for serious consideration to be given to the organization and preparation of staff personnel who are concerned with the receipt and dissemination of innovation. Every agency or institution which has as a major goal the dissemination or implementation of innovations must perform several distinct functions:

1. the identification of areas which require change through innovation
2. the collection of alternative innovative ideas, practices and materials which may be applied to adjusting problem areas
3. the screening of these promising alternative innovations and ultimately the making of decisions about which innovations are best adapted to the problem situation
4. the identification of alternative strategies or techniques for the dissemination of the desirable new items
5. the making of decisions which bear on the selection of the one best and most appropriate dissemination strategy to apply in each specific situation.

This illustrates the "do unto others" function of services related organizations. But, such organizations also find they are frequently in a "done unto" situation. The following functions must be performed when innovations are received from an external source.

1. Innovations such as regulations, policies, guidelines, etc. which come into the organization must be collected, processed, and dispersed.

2. Decisions must be made in relation to each new externally induced change with regard to:

   a. consequences which might follow if change is ignored

   b. possible problem areas where the change can be applied as a solution

   c. arbitration or negotiation open for revising the change in order to gain more desirable effects

3. Decisions with regard to the implementation of the externally induced change within the organization must be made.

A rule of thumb to remember in dealing with externally introduced innovations is: "change those things which need to be changed and can be changed and learn to work around those which need to be changed but cannot be changed."

These functions call for a highly flexible and diverse type of organizational structure--one which is responsive to the needs associated with the day-to-day administrative operations as well as the decisions which need to be made in order to meet and solve critical problems which arise.

The discussion of alternative organizations which follows is by necessity not agency or institution specific. The principles and models are just as applicable to school building organization as to LEA central office or state education agency programs.

Planning as a Prelude to (Re)organization

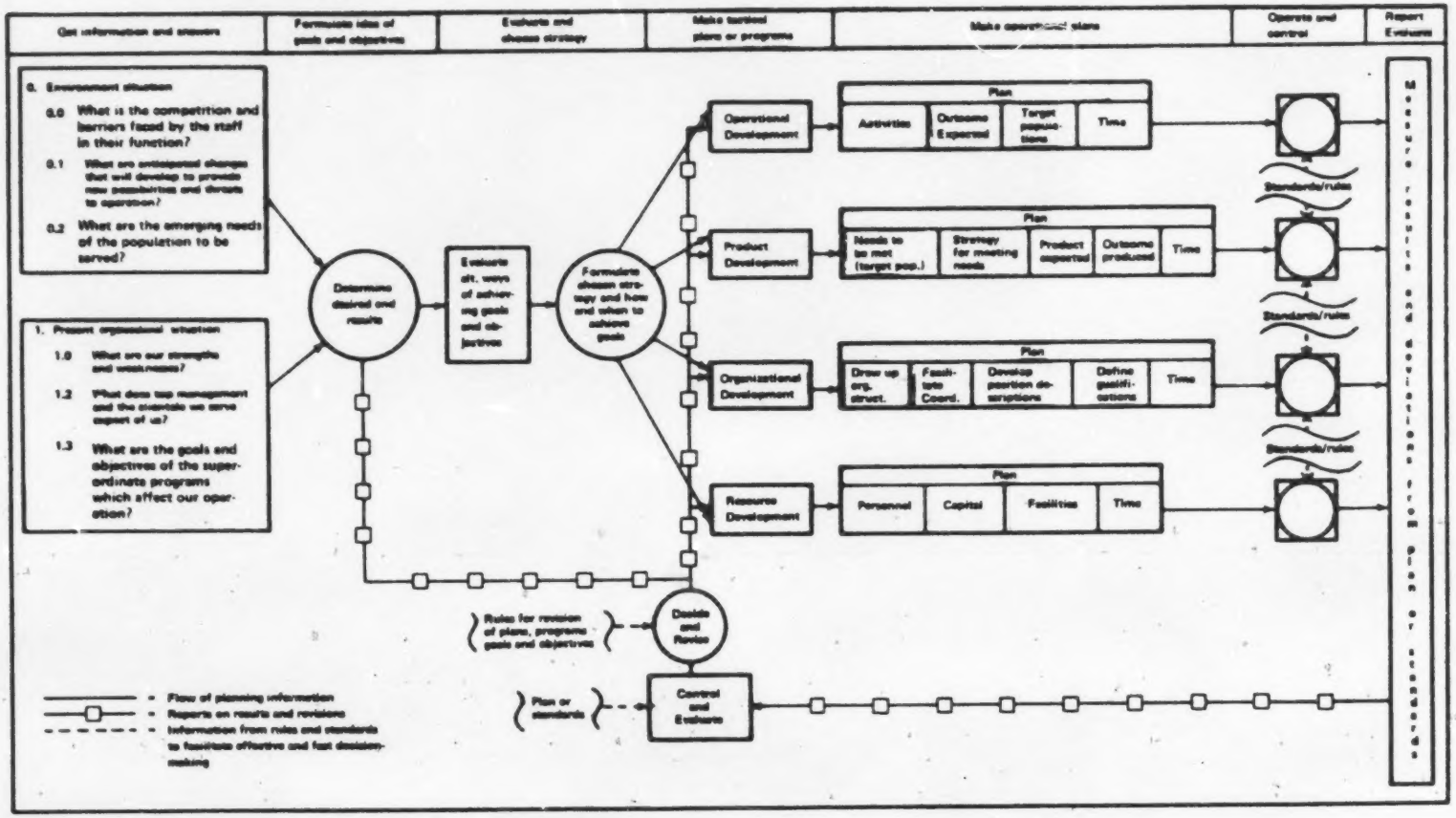
Janzen (1971) states that the two management tools of planning and reorganization give a multiple effect when properly used together. These two functions are just as important to the teacher in a learning laboratory as they are to a state agency head. The establishment of a long-range planning system should not be an end unto itself but rather a tool for achieving better results through change, innovation, and problem solving.

Figure 1 shows one way the planning system can be structured. While this system is appliable to all program areas, for illustrative purposes, our dicussion here will be limited to the organization of the change process. The first step in planning for innovation is one which involves a study of the environment in which the agency or institution functions. This may be accompanied by organizing a planning task force for vocational education. The planning process should be integrated into an in-service education program for staff development. The following abbreviated steps are suggested:

1. organize a task force of concerned individuals to study the vocational education context and needs related to the change process,

2. establish agency/institution goals and objectives for accomplishing identified needs,

Figure 1. The Systematic Planning Concept - Steps and Sequence (Adapted from Janzen [1971])


Get information and answers
Formulate idea of goals and objectives
Evaluate and choose strategy
Make tactical plans or programs
Make operational plans
Operate and control
Report Evaluate
0. Environment situation
0.0 What is the competition and barriers faced by the staff in their function?
0.1 What are anticipated changes that will develop to provide new possibilities and threats to operation?
0.2 What are the emerging needs of the population to be served?
1. Present organizational situation
1.0 What are our strengths and weaknesses?
1.2 What does top management and the clientele we serve expect of us?
1.3 What are the goals and objectives of the superordinate programs which affect our operation?
Determine desired end results
Evaluate alt. ways of achieving goals and objectives
Formulate division strategy and how and when to achieve goals
Operational Development
Product Development
Organizational Development
Resource Development
Plan
Activities
Outcome Expected
Target population
Time
Needs to be met (target pop.)
Strategy for meeting needs
Product expected
Outcome produced
Draw up org. struct.
Facilitate Coord.
Develop position descriptions
Define qualifications
Personnel
Capital
Facilities
Standards/rules
Decide and Revise
Control and Evaluate
Flow of planning information
Reports on results and revisions
Information from rules and standards to facilitate effective and fast decision-making

3. determine priorities for change based on goals/objectives and available resources,

4. ascertain functions and activities which will need to be performed in order to achieve priority goals/objectives,

5. consider the functions/activities in (re)organizing to produce change.

In summary, this task force must ask questions about the environment which leads to the formulation of goals/objectives with a definition of expected outcomes and of decisions on the strategies to be used in achieving goals. The tactical plans may then be made for the four main change areas shown in Figure I: operations, products, organization, and resources. The programs then are broken down into more detailed and specific plans by the individual or groups assigned to each main change area. The operation or implementation of the plan is guided by existing standards, rules, or policies at all applicable administrative levels.

Implementation control, the reporting of results (deviation from plan), feedback, control of results and decisions about plan revision should all be completed at critical points throughout the planning and operational change cycle. Such events should also occur at the end of the year or upon completion of the project.

What changes should be planned? Obviously resource limitations prohibit the implementation of programs to serve all goals/objectives. Therefore, priorities must be determined. In order to come up with a priority ranking, many factors should be considered. Among them are:

1. needs of target populations--relative needs of employers, employees, students, teachers, administrators, etc.,

2. cost effectiveness-- outputs realized as compared to the necessary resource inputs, and

3. influence base-- outputs or products which will provide favorable conditions for implementing future changes.

The foregoing is only one possible way to effect the planning and implementation of change. Many variations are possible. It must be remembered, however, that a sound planning procedure must precede (re)organizational development and that this planning must be a continuing process (planned change). Once a proper plan has been arrived at, a good climate should exist for: management by objectives, faster and more qualified decision making, delegation of authority, engagement of individuals on all organizational levels, better utilization of resources, wider scope of services and improved performance.

(Re)organizing for Planned Change

Making the right decisions which lead to the implementation of desirable change really begins with the (re)organization of agencies or institutions who are responsible for producing such change. Traditionally educational organizations at all levels have been charged by statute with a single major responsibility: "to maintain, extend, and improve an educational program which

meets the needs of all citizens within the program boundaries assigned to them by law."

The responsibility for providing services and functions to educational programs varies greatly in scope and nature depending on the levels at which they are performed. There are certain common functions which are performed in varying degrees at all levels. The following list is an attempt to identify areas of activity relating to the production of change which are common to all levels of vocational programs:

1. curriculum development and improvement
2. improvement and development of instructional practices
3. recruitment, selection and orientation of staff members
4. development and conduct of in-service and pre-service personnel development programs
5. design and conduct appropriate research programs
6. develop budgets to provide adequate resources
7. devise and maintain a public information program
8. evaluate programs and personnel
9. coordinate the efforts and services of all appropriate agencies and institutions with those of the public school vocational education program
10. develop annual and long range plans
11. support and cooperate with appropriate professional organizations
12. maintain, improve, and/or extend vocational education facilities and equipment
13. facilitate guidance and counseling services
14. facilitate programs of job placement
15. design, collect, and analyze management information data for decision-making
16. prepare reports of activities and projects
17. monitor programs and personnel

These services and functions are broad and general categories which need to be considered for performance or delegation within any (re)organization.

Presumably, organizations evolve for some reason and simply do not automatically come into existence. The reason for an organization's existence is to accomplish some goal or set of goals (such as those developed under the previous section). Organizations should be structured so that they can perform their functions most effectively and efficiently (produce desired

changes). Usually the number of levels in the hierarchy that a function is removed from the top level in the organization and the number of people responsible for a specific function indicate the relative importance of that function within the organization.

A fallacy that sometimes accompanies a (re)organization of the type we are contemplating here is "that changing the organizational chart configuration" will somehow cause a change in all other aspects of the organization. "Re-drawing the lines and moving the boxes" will not necessarily cause people to communicate with each other, to interalize the goals of the organization to offer creative rather than bureaucratic solutions to problems, or to be flexible in the execution of their duties. Changing the organizational chart, however, is the second step in a program that is designed to bring about long-term change. It must be followed by other procedures that will increase the communications, capabilities, commitments, and motivations of organizational members. Activities such as the development of mission statements, position descriptions, goals and objectives, etc., must accompany any major (re)organization. Therefore, a well-planned organization chart is not a means to an end; "the delivery and utilization of effective and relevant instructional programs in vocational education which meet the needs of every individual learner."

General Principles Governing (Re)organization

The typical educational agency has traditionally been a bureaucratic organization with well defined offices or bureaus, somewhat well defined jobs and responsibilities, and a more or less strict adherence to rules and regulations. Wever (1974) described a bureaucratic organization as including the following:

1. an organization of official functions bound by rules
2. the specification of a sphere of competence for each member including (a) an obligation to perform functions which have been designated by a systematic division of labor, (b) providing the incumbent the necessary authority to carry out the functions, and (c) defining the means of compulsion that can be employed
3. the offices are organized into a hierarchy, i.e., each lower office is under the control and supervision of a higher one
4. the rules that regulate the conduct of an office may be technical rules or norms, which in using require specialized training of the incumbent
5. administrative acts, decisions, and rules are formulated and recorded in writing
6. incumbents are only subject to authority with respect to their impersonal official obligations
7. incumbents are selected based on technical qualifications and are remunerated by fixed salaries

The bureaucratic organization may assume one of two alternative forms in vocational education agencies or institutions. These are (1) the "line and staff" arrangement, or (2) the matrix arrangement.

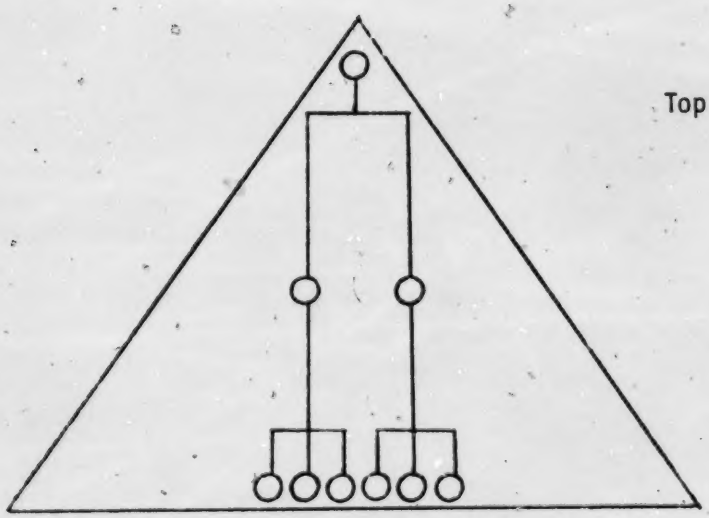
Line and Staff Arrangement vs. The Matrix Arrangement

The "Line and Staff" Organization is arranged around the concept that everyone in the organization is responsible to someone else for direction and evaluation. It is developed on a pyramidal configuration with the ultimate control being centralized at the top of the pyramid. This pattern lends itself very well to a management staff which is autocratic and authoritarian in its style. It is by far the most efficient type of organization but not always the most effective. This format has its greatest value in situations where speed in decision making and implementation are critical and where staff morale, accuracy, permanency of actions, etc., are not important considerations.

The arrangement is illustrated by the model shown in Figure II. The line (vertical axis) represents authority and the staff (horizontal axis) represents advice and ideas, although this dichotomy should not lead to a clear-cut double-tract concept. A unifying rather than diverse interpretation should be held.

Figure II

Traditional "Line and Staff" Organization



This pattern adapts best to relatively small groups who have comparatively basic and simple functions to perform. Orders or commands are usually passed down from the top level of management and are implemented by a lower level in the organization. In theory ideas and information in turn are passed up the chain of command to be used in revising decisions or making new ones. The traditional concept of staff in this plan is aid to the executive.

The organization is by structure very inflexible and pyramidal in configuration. Power and decision-making responsibility are usually centralized in one position at the top of the pyramid. It is characterized by the distinct separation and identification of each of the major functions to be accomplished.

This configuration lends itself well in cases where top management is autocratic and control conscious and where the worker levels lack creativity, and follow directions well. Decisions and directives are usually based on and issued in the form of policy statements or regulations. There can be no question that this type of structure is the most efficient and is especially well suited to "crisis oriented" management. It does not however lend itself to making use of the full-range of expertise in the organization in problem solving, or to in-depth, comprehensive, and creative long-range planning.

The matrix format for organization development was one which was first used by NASA in the early space program. It has since been adapted to extensive use in the military and in business and industry. Its major thrusts are in two directions:

1. personnel and program development and management

2. decision making and problem solving

The matrix type of organization provides a basic administrative "skeleton," while incorporating a potential for great flexibility in assignments. Special project groups, task forces, and/or committees can be formed and dissolved without disrupting day-to-day operations. When problems are only vaguely understood, when solution strategies do not yet exist, and when resources have not yet been developed, groups of individuals with varying backgrounds organized into project groups or task forces foster the development of quality programs. Manpower redundancy is minimized by "borrowing" people for temporary or intermittent assignments.

Janger (1963) has stated that project teams have been used for "almost any temporary task that was big enough to require the establishment of a standard organization." By designating someone as a task force coordinator, the agency can create two main branches in the organization. One will be the operations branch involving the typical operational personnel. The other, the task force branch, will be a parallel branch in the organization. It will "borrow" personnel intermittently or temporarily from the operations branch for special assignments on task forces. Figure III depicts this kind of organization. Staff may be organized into two categories in this plan:

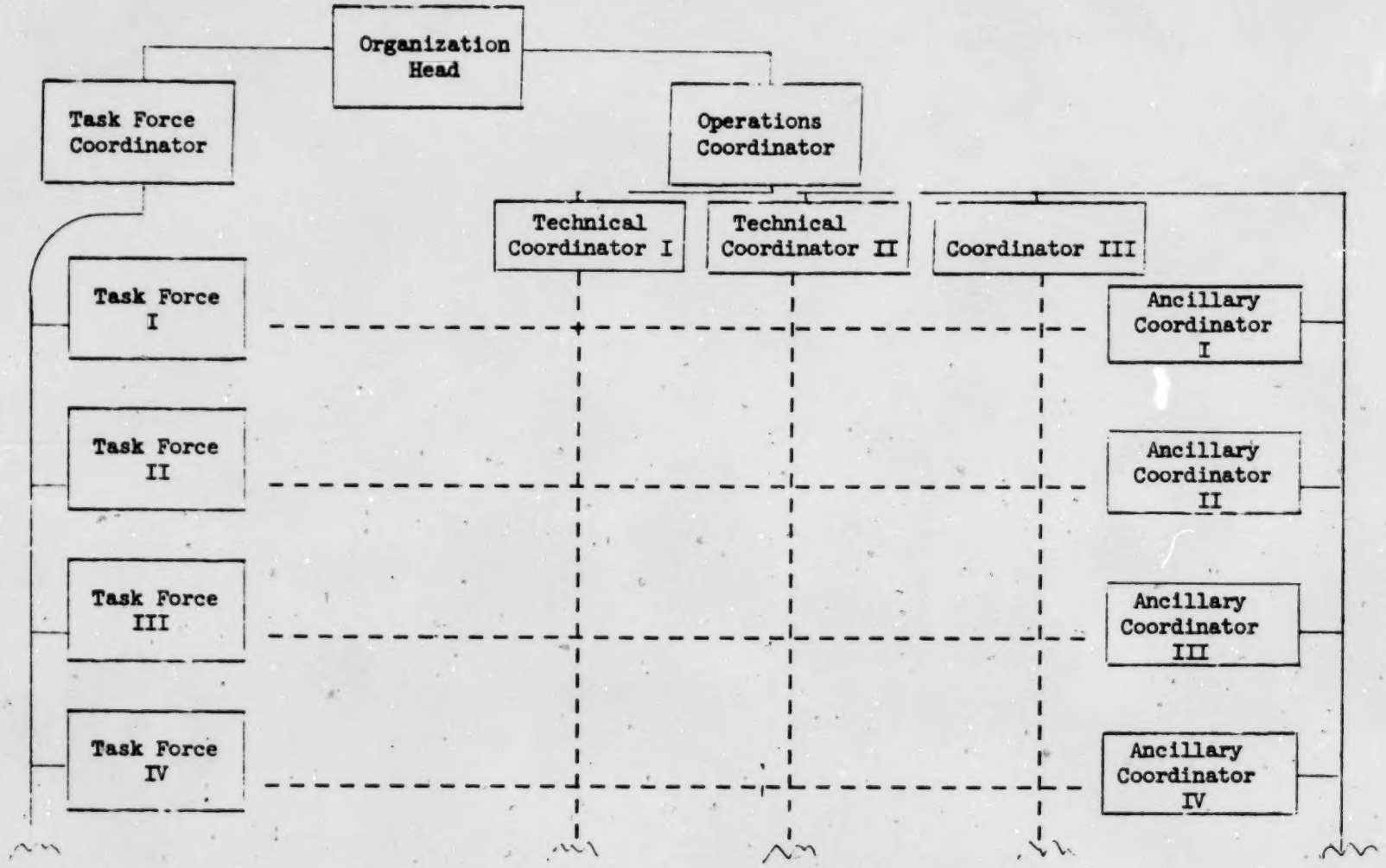
1. Technical Staff - these people possess knowledge and skill that is highly specialized and unique within narrow and well defined subject matter areas.

2. Supporting or ancillary staff - are mainly interested in patterns of management control, organization structure, budgeting and accounting, personnel development, management planning and assessment.

(Adapted from Pfiffner and Sherwood, 1960)

Figure III

Matrix Organization



In a matrix organization, the planning and evaluation of new programs are accomplished by project groups or task forces. These task forces cut across functional and specialist groupings within the organization. As was stated before, the two main divisions in a matrix organization are the operations division and the task force division. The operations division maintains the continuity of the organization, i.e., the traditional duties of an education agency, while the task force division promotes the development of innovative solutions to old and new problems.

The task forces are engaged in developmental activities and are staffed by members from the operations division of the organization as well as other appropriate individuals. The selection of individuals for various task forces is the responsibility of the task force coordinator. The flexibility of the task force branch, plus the stability of the operations branch yields an organization that not only meets the current educational needs, but also is preparing for the future.

As can be seen in Figure III, the coordinator of task forces will accept assignments from the agency head. The coordinator's main task is to develop task force groups whose members are selected because of their expertise which relates to the particular problem of concern. The coordinator must have the authority and status within the organization that allows him to approach middle management personnel with requests for assignments of various individuals to task forces. Task forces may be made up of members from within as well as outside the immediate organization.

The coordinator must have a broad knowledge of the human resources available to the organization, and must understand the comprehensive spectrum of vocational education. This individual must also possess sound and accurate judgement so that personnel can be most efficiently and effectively combined into task forces or project teams. Task force membership may vary widely in personal and professional characteristics of the members, as well as the number of members in each group.

In summary, the task force coordinator's job consists of:

1. receiving problems to be attacked from management personnel,
2. assigning the most appropriate persons to each task force group,
3. briefing each task force group on its mission and function, and
4. insuring the maintenance of task force records, including membership lists, objectives, timelines, milestone achievements, outcomes, etc.

From the standpoint of subordinate members of the organization, it is extremely important that someone in management be responsible for seeing that certain organization members are not over-utilized and others under-utilized in committee and task force assignments. The task force coordinator must have a thorough knowledge of each member's personal capabilities, characteristics and capacities. He must also be thoroughly schooled in systems design, personal managment, evaluation techniques, and modern problem solving methods. It is the basic responsibility of the agency head to select and prepare this task force coordinator.

Siepert and Likert (1972) state that the best way to organize an educational agency so that it applies new research findings is through a matrix organization. In such an organization, the individual in charge of all short-term projects has to accomplish his goals by working collaboratively across institutional and functional lines. They recommend a matrix system as the best method for operating an educational institution. In such a system, organization influence is secured, not through a grab for power, but rather constructive problem solving in cohesive groups. The staff in such an organization is quite interested and willing to commit effort to innovative practices.

Research findings show that the results achieved by an organization depend both on the quality of the decisions and the extent to which those decisions are accepted. The matrix organization achieves better results than other systems for two reasons. First, its problem solving is better than the win-lose confrontation of other management systems and second, the decisions reached are executed with greater understanding and greater motivation by the personnel involved.

Developing a system for interaction--influence does not result in the abdication of responsibility by administration in favor of a "laissez-faire" management. Research findings demonstrate that this expansion of influence increases the amount of such influence superiors can exercise both on the decisions and on the implementation of those decisions. Management needs to remember that even the most elegantly logical decision is made futile by a lack of implementation or acceptance.

An organization is a group effort. It is made up on individual work groups structured around specialized functions. Such groups rather than single individuals are the basic components through which an organization gets its mission delineated and accomplished. By his own behavior, the work group leader (i.e., the manager administrator, or agency head) becomes a major "linking pin," or a major obstacle in helping fit his work group's performance into the total task of the whole organization. By his own leadership, he sets an example of how subordinates deal with him as a coordinator, and they with each other as individuals or as members of a peer group.

The task force approach is a management technique which capitalizes on some of the positive effects of group problem solving. Task force operations can be very effective for an organization, however, many individual managers have said "We tried task forces in the past but they didn't work because the mismanagement of one element of a task force caused its failure."

The following potential problem situations may occur when task forces are used to assist in making decisions.

1. Involving individuals from outside the immediate organization in task forces may produce a conflict situation.

2. Relying upon the expertise of the "loner" in task force deliberations may bias the outcome of such deliberations.

3. Differences of opinions or philosophical differences within the group may be difficult to resolve.

4. The group may be reluctant to reach decisions about possible solutions and a solution may be dictated by other people.

5. Members may disagree in their solutions and reach an impasse leading to confusion and frustration.

6. Solutions may become so complex and involved so as to be impractical to implement.

The potential strengths of using the task force approach in solving problems are:

1. provides input from several disciplines, content areas, philosophies, viewpoints, etc.

2. spreads the burden of advisement to several individuals

3. increases the acceptance of decisions by involving more individuals in the decision-making process.

There is a great need in education today to move from the traditional "line and staff" bureaucratic organization toward a more dynamic and democratic structure such as "the matrix." This shift is made necessary because of the following changing conditions in education.

A bureaucratic organization assumes a high degree of certainty or stability both within and outside the organization. That is, in most interactions the agency has with other organizations or individuals, it is assumed that all events are predictable or certain. However, most organizations do not have the pleasure of enjoying certainty in their environments. In the case of the education agency, students, state agencies, contractors, suppliers, teachers and building principals make it impossible to assume that any event will occur with certainty. As the environment becomes more variable and complex, many organizations continue to act as bureaucracies even when it is no longer appropriate. For example, many educational institutions have been criticized for trying to treat students as though they were identical to each other. This occurs when rigid adherence to rules is the enforced norm of any organization. By strictly adhering to rules, many educational institutions have forgotten that the primary goal of the organization is to educate its clientele.

The increases in knowledge that have occurred in the past few years have been overwhelming to many education agenices. Management information systems are now frantically being assembled to assist local administrators in the integration of vast amounts of information. This need for management information has introduced much risk and uncertainty into the organization. That is, there no longer is one source of information that will either support or refute a particular point of view; data is available from so many sources and is of such complexity that decisions are not easily verified.

Another factor which is causing the bureaucratic organization to become outmoded is the fact that new managerial strategies are necessary to cope with rapidly changing environmental conditions, proliferation of influences, and

diversity of power groups. Previously, rules and regulations could be adopted for most situations and hence management was basically a controlling function. Policy and procedures manuals are often outdated before they can be reproduced. Today, newer management techniques, such as management by objectives, PPBES, and goal setting are necessary to deal with the uncertainties that exist in the local education agency.

Along with traditional management techniques, the concept of centralization of authority in the top level management is being replaced by more decentralized approaches. The mass of information that is often needed for decision-making today is so vast that transmitting this information from the bottom of the hierarchy to top management may be a very expensive and time consuming process. Consequently, administrators are seeking ways to create an organizational climate in which complex decisions can be made by the people with the information, regardless of their location in the organization.

Blau and Scott (1961) suggest that a more dynamic organization differs from a more bureaucratic one in that:

1. Unrestricted exchange of ideas, criticisms, and advice improves communication.

2. Organization members are bound by a norm of service and a code of ethics to represent the welfare and interest of their (clients), rather than primarily promoting the interests of the organization. That is, a bureaucrat's decisions are expected to be governed by compliance with directives from superiors, whereas the non-bureaucrats (professionals) are governed by internalized, professional standards.

3. Coordination of effort is accomplished by holding members accountable for attaining goals and objectives, rather than relying upon a hierarchy of authority.

Organization Development

One method of moving from a bureaucracy into a more dynamic, flexible body is organization development. Beckhard (1971) has defined organization development as a planned, organization-wide effort that is managed from the top and seeks to increase organization effectiveness and health through planned interventions in the organization's processes through the use of behavioral science knowledge. An orgnanization development program is a planned change effort in that it involves a systematic diagnosis of the organization and the development of a strategic plan for improvement in the mobilization of resources to carry out this effort. An organization development program is related to the total organization in that an entire system rather than the subsystems of the organization is changed. Such a program is managed from the top with administrators being committed to the program and actively supporting the methods used to achieve the goals. Efforts like this increase organizational effectiveness in that they accomplish the following:

1. Members of the organization manage their work against goals and plans for achievement rather than rules and regulations.

2. Decisions are made by and close to the sources of information, regardless of where these sources are located on the organizational chart.

3. Communication laterally and vertically is relatively free from distortion.

4. There is a high interchange of ideas and possible solutions, with relatively little energy spent in clashing over interpersonal difficulties.

Organizational development achieves its goals through planned intervention by using such processes as individual motivation, power, communications, perception, cultural norms, problem solving, goal setting, interpersonal relationships, intergroup relationships, and conflict management. Organization development capitalizes upon many processes in order to realize positive changes in organizational interactions. For example, individual motivation is enhanced by giving individuals more control over their work (autonomy) through goal setting and management by objectives. The process of setting goals also enhances communication between subordinates and their superiors and often includes group or team goals which foster cooperation. Goal setting if often followed by delegation of authority since the subordinate now knows how he is expected to perform (goals), rather than trying to simply please his superior. Once the superior perceives that subordinates can assume and do desire more responsibility in their jobs, he can delegate more authority to them.

After this process is begun, it tends to perpetuate itself and lead to increased effectiveness. Subordinates take more interest in their work, are committed to the goals of the organization, communicate more with their superiors, and eventually their superiors delegate more authority.

Also, as subordinates become more responsible for their jobs and see their duties more in terms of the organization's goals, the need for a hierarchy becomes less important. Relatively few levels are needed in an organization in which each member assumes the responsibility for his job, and many supervisory positions cease to be "controlling" oriented and become goal oriented. The reduction of the number of levels in an organization decreases the filtering of information, promotes efficiency by reducing the number of supervisory personnel and enriches the jobs of subordinates. Organization development efforts usually adopt the following operational goals:

1. To develop a viable system that can be organized in a variety of ways depending on <u>tasks</u>. This means systematic efforts to produce flexibility in the way the organization operates, so that it can organize its members depending upon the nature of the task.

2. To optimize the <u>effectiveness</u> of both the stable (the basic administrative organization) and the temporary systems (the many task forces, projects, committees, etc., through which much of the organization's work is accomplished) by built-in continuous improvement mechanisms.

3. To move toward high collaboration and low competition between interdependent units. One of the major obstacles to effective organization is the amount of disfunctional energy spent in inappropriate competition--energy that is not available for the accomplishment of tasks.

4. To reach the point where decisions are made on the basis of information sources rather than organizational role. This means that there is a need to move toward a norm of authority of knowledge, as well as the authority of role. It does not mean that decisions should be moved down in the organization; it means that top management should determine which is the best source of information to work with a particular problem.

An underlying assumption of organization development is that groups and teams rather than individuals are the basic units of organization to be changed as one moves toward organization health and effectiveness. Individual learning and personal change do occur in organization development, but as a spin-off (not a primary goal). Likert (1972) has described an organization as "a group effect. It is made up of individual work groups structured around specialized functions. Such groups rather than single individuals are the basic components through which an organization gets its mission delineated and accomplished."

Organization development efforts are indicated when any of the following organizational conditions occur:

1. the need to change a managerial or instructional strategy

2. the need to change structures and roles within the organization

3. the need to improve intergroup collaboration

4. the need to open up communication systems

5. the need for improved planning

6. the need for a change in motivation of the work force

7. the need for adaptation to a new environment

All of these conditions could certainly at one time or another be real concerns of the education agency.

Any staffing arrangement which is based on the organizational behavior concept (OB) must take two important precepts into consideration.

1. It is important to look at both the organization (the nature of tasks, structure, reporting relationships, etc.) and the people.

2. It is equally important to believe that people want more from their work than merely financial reward, job security, humane treatment, and a rich social life. Managers should consider not only how they supervise people but also should think about how they deploy them. They should redesign jobs, decision-making processes, and control systems so as to provide staff with an increased sense of accomplishment from their work efforts. (Strauss, et al., 1974)

One crucial element of an organization development or change program is the individual or individuals often times called "change agents." Havelock (1971) indicates that a change agent assists in defining the needs of the organization and in determining various change strategies. The change agent, is therefore, an active participant, collaborator, and a conveyor of knowledge about the process of change itself. These change agents are experts in organization development and change, and they assist top administrators in the process of developing their organization's capabilities. This change person is a highly trained professional person with extensive experience in organization development, and not simply an extra staff member who is assigned the task. The process of organization development and change is a potentially harmful one if placed in the hands of the wrong individual. A person who is internal to the organization can well serve this function if the individual has been trained in organization development techniques and has the necessary qualifications. If such a person does not exist, the alternative possibility exists for retaining an outside consultant who can make periodic visits for the purpose of assessing progress and suggesting course corrections. This type of help is especially critical during the first year of a new (re)organization.

Siepert and Likert (1972) indicate that organizations which make the most effective use of new and improved technical and organizational procedures display the following characteristics:

1. The organization's personnel do not fear change.

2. They have a pervasive value the desire to be excellent and to adopt new and better procedures.

3. They are receptive, consequently, to new ideas and practices and are able to use them well. They can be innovative with new ideas of their own.

4. The organization is flexible and adaptable. There's an organizational climate of expectancy that changing structure and methods will permit an even better performance.

5. Employees, supervisory and non-supervisory, participate (to the extent they expect and have the skills to do so) in decisions affecting them and their work.

6. There is a high motivation to implement the decisions that are reached.

7. In short, the organization and its staff generally--rather than just some of its leaders--see change as a constructive force for progress, rather than a threat to be resisted.

Participative Decision-Making as an Influence for Change

A recurrent finding is that educational administrators are likely to support participative management as a great thing for other people. Such token support influences none of the factors that trigger an improved organizational effectiveness. If an organization is to change, the image for change must be established in the leadership behavior at the top of the organization.

In so far as is possible, the people who are affected by decisions should be involved more fully in the process of defining the problems, developing alternatives, and the making of choices. This insures more cooperation in implementing the decisions as well as gives better quality decisions. These participative methods can also lead to greater production, increased efficiency, and higher morale.

If participatory management is to be used, the organization environment must be adaptable. There cannot be conflicting elements in the environment which neutralize or interfere with the effects such participation is to produce. For example, the decision to use participatory management cannot be non-participative. This in effect becomes a democratic-dictatorship. "You will participate regardless of whether you want to or not." The bulk of needed advice should come from sources internal to the organization with only a minimum amount coming from external sources, and then only as a matter of supplementing inadequate internal sources.

Some negative aspects of participatory methods employed under the matrix form of organization may be:

1. Managers sometimes make decisions and consult with staff members under the pretense of seeking help in making a decision which has already been made. This, in effect, becomes brainwashing or the seeking of reinforcement. It is often interesting to observe the reaction of managers who are confronted with invited participants who refuse to support a decision which has already been made.

2. Managers sometimes only consult with their staff about impossible or highly difficult situations. A favorite ploy of an autocratic manager is to pass the very difficult or almost impossible decisions to the lowest level of the organization. The logic behind such action is that if things don't work out well, the blame will be placed at a lower level.

3. Participative management techniques should not be used by all managers. For example, a manager who is easily threatened or who needs constant reinforcement may feel uncomfortable since this form of decision making elicits open and frank criticisms and evaluation by subordinate staff. In other words, the manager and anyone who participates must be able to take criticism.

In deciding upon the strategy to use in solving a particular problem, the administrator should always consider the fact that inviting wider involvement in making decisions does not always bring positive results.

It should be kept in mind that the decision-making process can produce many side benefits, some desirable and some undesirable. Participative decision-making can be used as an in-service development program for strengthening and improving staff. It can also be used as a technique for observing an individual's readiness for promotions or assignments requiring increased responsibility. In these situations, the subordinate may not relinquish his responsibility for the final decision, but rather becomes a filter through which the decisions his subordinates make are passed and evaluated. This process must be so structured that the subordinate does not perceive it to be simply a simulated procedure.

Some people are not interested in participating in the making of decisions. In fact, some people are not interested in taking any responsibility. Many studies show that frequently employees are willing to let employers make decisions for them.

What are the reasons for this condition?

1. Employees are conditioned to having someone else make their decisions for them.

2. Their personality characteristics are not conductive to making decisions.

3. They do not trust or respect their superiors.

4. They perceive their role as being one where they do not make decisions.

Great care should be taken to avoid using such individuals in task force situations, except in extreme cases where the unique expertise they possess is not readily available from another source.

Schmuck (1973) claims that by changing organizational patterns to increase reliance upon participatory decision-making, many sources of conflict, both external and internal, can be uncovered before severe hostilities develop. He further states "....organizational structures can be built through which these groups can communicate effectively with one another, and skills and norms can be established within and among these groups for joint problem-solving and decision-making." One of the goals in organizing for participatory management should be to bring administrators, supporting staff, and subordinate staff members into the same cycle of decision-making. Schmuck does not believe that every staff member should participate in every decision. Instead, he suggests "one of the important tasks (of the agency head) is ascertaining criteria for assigning some decisions to particular staff members." Thus, the agency head can either make a decision himself, delegate it to a subordinate, or assemble a group of individuals who will collectively solve the problem.

Most educators who make informed individual decisions go through the following five stages of activity: (Dill - 1962)

1. Agenda-building phase (intelligence activity) - covers the activities of the administrator in defining goals and assigning priorities for their completion.

2. Search phase (design activity) - encompasses efforts to find or invent alternative courses of action and to find information that can be used to evaluate them.

3. Commitment phase (choice activity) - involves testing proposed alternatives to choose one for adoption or, as is often appropriate, to postpone making the choice.

4. Implementation phase includes clarifying the meaning of a decision for those who are to carry it out, elaborating new tasks or decision problems that the commitment leads to, and motivating people to put the commitment into effect.

5. Evaluation phase involves examining the results of previous commitments and actions in order to find problem areas for the agenda and to help the organization learn how to make decisions more effectively.

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Interface of Vocational Education with Other Agencies/Institutions Concerned with Producing Change in Manpower Delivery Programs

A number of attempts have been made over the years to coordinate the change and innovation of manpower delivery systems. Most of these efforts have taken place at the state level or in major urban areas. Nearly all these efforts have been mandated in order to receive and use federal funds. Governor's and Mayor's Manpower Councils, CAMPS Councils, 1202 Commissions, CETA Councils, etc. are examples of such activities.

Governmental agencies continue to create consortia of agencies/institutions in an effort to bring together those groups who are concerned with the planning and implementation of manpower programs. It is doubtful, however, if committees with such strong political orientation will ever be completely successful in bringing about total interface of all agencies at the federal, state, local and/or public and private levels. This is not to say that vocational education should not be represented on such councils and that mutual benefits cannot be realized. It is recommended, however, that vocational agencies engage in additional interfacing activities which complement, enhance, and focus the results achieved when groups whith a common cause attempt to bring about desired changes.

The manpower community is made up of several types of institutions. These agencies may be classified generally according to function, and may be further cross-clarified according to the much more global organization within which they operate administratively. Some of these agencies may also be classified according to the target population they serve. The following are illustrations of the types of agencies/institutions which should be included in this interface effort:

1. State/Local Chamber of Commerce
2. Retail Merchants Association
3. U.S. Department of Labor
4. Service Clubs
5. Department of Employment Security
6. Department of Vocational Rehabilitation
7. Opportunity Industrialization Centers
8. State and Local Apprenticeship Councils
9. Various Business, Industry, and Labor Organizations
10. Agricultural Organizations
11. Youth Groups (e.g., Boy Scouts, Girl Scouts, 4-H Clubs)
12. State and Local Development Councils
13. Institutions of Higher Education

14. Schools for Special Populations (blind, deaf, etc.)

15. Parent Teacher Organizations

16. Veterans Administration

State plans for vocational education contain a minimum number of formal agreements which indicate cooperation exists between the state vocational education agency and other selected agencies. Observation and contacts with personnel in the concerned agencies indicated that the provisions set forth in the plan are not strictly adhered to and that contacts are generally informal with minimal interagency planning. This is not unusual since traditionally interagency cooperation among manpower agencies is crisis-oriented and problem-centered. These agencies tend to work together best when a situation of mutual concern arises. There is little evidence to show that long-term relationships exist among organizations who are concerned with the delivery of manpower education.

The greatest amount of interface takes place at the levels involving control and regulation of programs that are funded by federal and/or state funds. This constitutes a form of cooperation that is almost entirely based on administrative policies and guidelines which most frequently are dictated by the higher agency to a subordinate or applying lower level agency. This in effect becomes an autocratic type of interface which has some advantages but many more disadvantages. Such a relationship typically exists among the federal, state, and local sectors of public education.

Procedures to Produce Interface Among Manpower Organizations

The major question under consideration is: "What can be done to produce the maximum amount of desirable interface among all organizations who are concerned with the production of change in manpower delivery programs?"

The following activities should be helpful in producing a desired level of interface:

1. Identify all organizations to be included in the interface effort and determine their role in producing change in manpower programs.

2. A formal, written memorandum of understanding should be developed with each appropriate agency or institution. This document should be included as a part of the state or local agency annual plan for vocational education and should be revised at least once each year. The memo can serve as an agreement which outlines such specific services to be performed by both parties, official and unofficial levels and areas of contact, purposes to be achieved through cooperative efforts, etc.

3. An individual member on the staff of the vocational education agency should be assigned as a liaison to each cooperating organization. Their relationship to the agency and/or institution and its governing body can be designated in the memorandum of understanding suggested in item 2. Periodic written reports should be made to the board of control or appropriate administrator outlining plans, activities, problems, etc., evolving from the interface operation.

4. A formal written communication should be sent to the head of each cooperating agency at least once each year pledging the organization's support to the efforts of that body and in turn soliciting their help and guidance in improving vocational education.

5. Each year a dinner meeting should be held for the purpose of briefing cooperating and supporting organization personnel about plans and progress in vocational education and to solicit their advice about the need for innovations.

6. Agency personnel assigned as a liaison to various organizations should actively seek invitations to attend boards of control meetings, annual or regular membership meetings, and should volunteer to appear on the program of such meetings to publicize changes taking place in vocational education.

Formal, planned interface cannot be accomplished through a "wait till they call us" program. Each educational agency must mount an offensive designed to reach out and involve every manpower related agency which operates in their territory. There are, by their own admission, many government and private agencies who are waiting in the wings for the day when manpower related programs operated by the public schools flounder. If this should happen, these institutions will take over functions which rightly belong in the hands of competent and skilled educators. The top management in education must be in a position of not only knowing what the plans of such vital organizations are, but also be able to exert an influence on shaping their plans. Interface with key organizations can be extremely helpful in the dissemination of innovative ideas and programs to the entire manpower community.

SECTION III

TECHNIQUES FOR INFLUENCING OTHERS TO ACCEPT CHANGE

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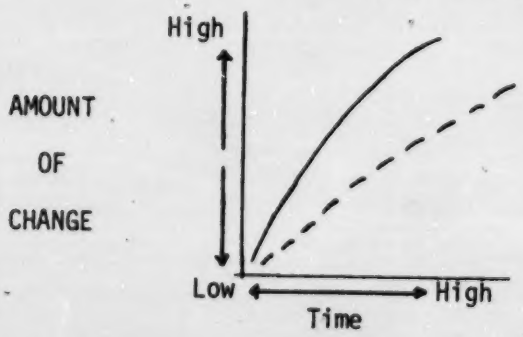
The previous two sections of this paper have discussed some of the critical elements of the change process and alternative organizations for facilitating innovation adoption. This section of the paper will discuss types of techniques which may be used to propose changes in vocational education. These techniques (or tactics as we refer to them at The Center) have limited ranges of effectiveness for resolving problems associated with the acceptance of new ideas. You should understand some of these limitations as you prepare to formulate effective installation strategies back home.

Accepting Change is a Problem-Solving Process

Conditions for learning are enhanced when an individual is aware of the need for change. This "felt need" cannot be assumed by change advocates. It may be induced! However, receptivity to change is influenced, in part, by the rate of change imposed upon individuals. Some proactive persons enjoy coping with new situations. Others tend to value stability and continuity in their activities. A delicate balance exists between stimulating individuals to objectively consider proposed innovations and provoking them into resistance behaviors. The change advocate must gauge his strategy carefully to meet the conditions and expectations of the client.

Figure 1 illustrates two rates of change which can be adapted to the client situation. The solid line illustrates a greater amount of change per unit of time than the dotted line. Different techniques must be used to achieve one rate rather than the other. Sometimes, change advocates misjudge the tolerance of clients for rapid change and exceed the client's threshold for ambiguity. This can result in the client rejecting the innovation on site. When this happens, the change advocate has lost ground because a stated position against the innovation must be overcome.

FIGURE 1
RATE OF CHANGE



It makes sense to move at the client's pace in creating an awareness of the need for the change. As Wall points out in his review of change strategies, resolution of problems should follow a problem-solving model:

1. Problem definition or elaboration,

2. Determination of alternative approaches to the solution,

3. Data gathering and analysis of information, and

4. Selecting the best alternative from among all recognized possibilities.[1]

Awareness of the need for change is the first step among several which can be taken to encourage the use of innovative products. Rogers has conceptualized five stages for the adoption process:

1. Awareness. This stage indicates the client has been exposed to the product, but is not motivated to actively seek more information.

2. Interest. The client is seeking more information; he indicates a willingness to invest time and energy in the pursuit of this information.

3. Evaluation. The client mentally judges the perceived relevance of the product for resolving the problem under consideration.

4. Trail. This stage represents a commitment of resources to the active use of the product on a small scale. The product may be tested over a short period of time or selective aspects of the product may be tried.

5. Adoption. This stage suggests full scale use of the product. Of course, few products can be said to be adopted in a "permanent" sense because conditions are dynamic, and new innovations should be introduced to meet the changing conditions.[2]

The stages of the adoption process are largely the result of the work of rural sociologists who studied farming practices. The application of such stages to the educational environment must be done with caution since the analogy between agriculture and education breaks down on certain key considerations. For example, decisions usually related to farming are made by the farm operator, a single individual. Schools are complex organizations with decisions made by different people at different levels. The advent of teacher unions actively engaged in collective bargaining procedures complicates the decision-making situation.

Nevertheless, the stages discussed by Rogers are useful as guides in the formulation of problem-resolving strategies. Recent work at The Center for Vocational Education indicates information strategies may be best used early in the decision-making process, while coercive strategies may have a place in the later stages. Figure 2 shows the relative perceived effectiveness of diffusion tactic types for all stages of the adoption process. Notice the higher ratings for the persuasive tactics when compared to the informative and coercive tactics. These ratings were averaged across all stages of the adoption process and examples of several classes of tactics.

PERCEIVED EFFECTIVENESS OF DIFFUSITON TACTICS[3]

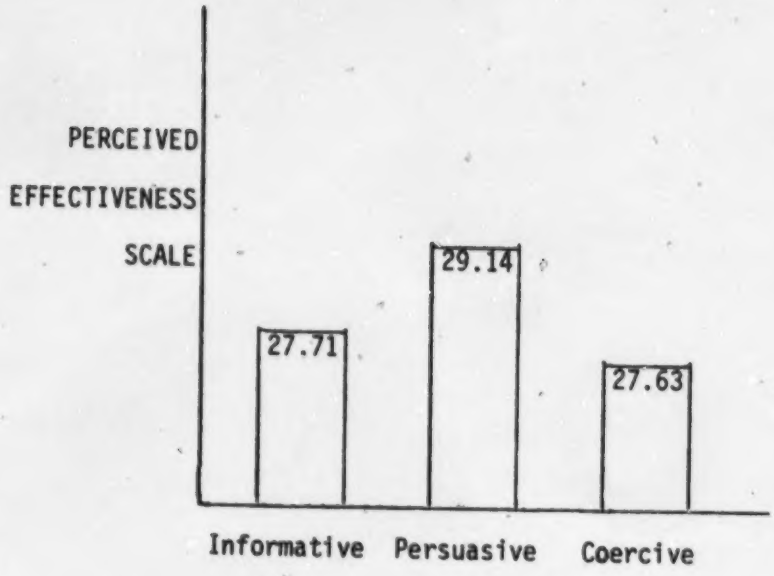


FIGURE 2

These average ratings of tactic types summarize the responses of over 500 teachers and administrators of local school districts in three selected states.

Identifying Cues in the Selection of Change Strategies

An effective change advocate needs to develop an ability to diagnose problem situations for the purpose of identifying appropriate use of change strategies. The development of this ability requires a knowledge of the factors critical to the formulation of a successful strategy. In the earlier sections of this paper, we have alluded to some of these factors:

1. Time. If you have been asked to assume responsibility for resolving a problem under severe time constraints, you do not have the luxury of much deliberation and discussion. Decisions must be made by the responsible person in charge. Under these conditions it is important for the participants in the decision process to respect the leadership of the chairman or department head. This suggests the need to select an opinion leader for responsible action under conditions of limited time.

2. Funds. The size of the budget creates conditions which dictate the amount of resources which can be invested in the solution of the problem. Grandiose solutions to problems are not always necessary or desirable. Sometimes, it is more important to persuade a single individual to consider an alternative approach or procedure than to design a long-term installation strategy. It is useful to have funds to bring in outside consultants for expertise which is not present in the

in-house group. The critique of plans or ideas developed by your group is an excellent time for an "outside" opinion. Sometimes funds cannot be substituted for time! This is an important lesson to learn in the design of problem-resolution strategies. People on the site need time to develop and think through their own approaches to resolution of problems. One of the best uses of funds is to pay for substitute teachers or other personnel to release persons for developing or adapting the innovation to the local situation.

3. Antecedent Conditions. One of the best indications of the probable success of your problem-resolving strategy lies in the history of the school district. Has the district been successful with similar past projects? Are the necessary personnel and other resources available to operate the proposed project? Past conditions should suggest product adaptations for resolving local problems.

4. Stage of Product Development. The strategy used to resolve a problem should vary with the quality of the product-solution proposed. If the product is well developed and thoroughly tested, more forceful tactics may be used to recommend it to the client. Advocates of the product should become more confident as positive performance data is generated. On the other hand, if the suggested solution to the problem is just an idea in the mind of the proposer, it is difficult to recommend it unconditionally. Products in early developmental stages should be subjected to periodic reviews and examinations. Whenever possible, pupil data should be examined to determine the effectiveness of the product rather than the opinions of staff. Personnel associated with the innovation may be enthusiastic with little improvement in learning behavior. However, it is rare to find improvement in learning behavior without enthusiastic comments from teachers.

5. Relationship with the Client. Your relationship with the client has much to do with the tactics you will be able to use effectively in installing solutions to problems. If you are generally respected by the target audience, if you are a member of their group (or past member), or if you can demonstrate a knowledge or ability beyond that held by members of the client group, then you are likely to be accepted and valued as a consultant on use of the product. If you have been in competition with the client organization in the past or in some ways have been at odds with leading members of the client group,then it will be difficult for you to advise the client, and your advocacy of the product will not be beneficial. For example, sometimes big city schools are in competition with state education departments for federal dollars for vocational programs. This situation tends to develop independent behaviors rather than dependency relationships. Small rural school districts tend to be supportive of state education programs and products.

6. Stage of Product Installation. If you are just beginning the development of a solution to a problem, it is more likely that you will rely on informative tactics to make others aware of the program and create interest. As the project nears completion and deadlines are missed, the project director usually becomes somewhat more dogmatic and tends to become more coercive in his or her decision-making. This is a natural tendency which is consistent with the limitations which tend to be imposed as the project draws to a close.

7. Scope of the Target Audience. The number and composition of the target audience to be influenced by your product-solution determines to a great extent what installation tactics should be used. For example, general information on the nature of the project may be provided to people in the community using mass media as vehicles of communication for the purpose of creating awareness and interest in the project. On the other hand, the administrator who is being asked to provide teachers and classrooms for a small scale test of the product deserves a detailed briefing in the privacy of his office for the purpose of evaluating the merits of the project. It is much easier to generate project installation strategies for relatively homogeneous audiences. When a community, for example, has sizable ethnic minorities, there may be a tendency for factions to take sides on issues.

Most of the factors mentioned above are conditions which can be present in a community or state setting. Most of these conditions are difficult to change--they are givens in the short run--to be accepted and managed by the change advocate. Over the long run it may be possible to create a climate for innovation and renewal in education systems, but the process is a long-term investment, and the change advocate should not become discouraged with setbacks along the way.

Uses of Tactic Types

Before discussing the uses of specific tactic types, a word should be said about creating conditions for the effective use of installation tactics. State Department of Education supervisors should be concerned about the development of viable programs and projects which can be exported to other school districts with the same problem. If you have funded the development of career education materials in one district, you should encourage the use of these materials in other districts.

Not very many states have made a concerted effort to disseminate developed products from one site to another either in vocational education or in Title III programs. The RCU's and other agencies have disseminated document-based materials bystematically in many states. But we don't know much about the use of demonstration sites. For example, we need to know more about procedures which foster the adoption of the same program in other sites. The limited information we have indicates that demonstration sites are generally not very successful unless there is a linkage with funding source for sites wishing to adopt the product. Typically, states have not attempted to set up a network of demonstration sites for products.[4] However, we have a need for this system.

The problems associated with the design of effective temporary linking systems are many. Probably the best known synthesizer of the literature in this area is Havelock.[5] He notes the problem of marginality usually associated with the linker role. Individuals attempting to translate the needs of the operating local school district to the state department staff oriented to schedules, budget, and so forth, sometimes experience feelings of frustration and lack identity with either reference group. Many of his comments have been substantiated in research by Sieber and other following up a three-state experience with educational extension agents.[6] We have much development work to do

in the area of systematic diffusion of exemplary programs and products throughout states.

Informative Tactics. This class of tactics represents the most straight forward, non-complex tactic type under discussion. Information can flow from a source to a receiver without benefit of a built-in response mechanism. Printed forms of information have advantages over spoken forms for storage and retrieval purposes. The use of brochures and memos, however, do not always catch the attention of the target audience. Sometimes the more personal approach tends to communicate more effectively than impersonal channels of communication because people tend to be more responsive to other people.

Two-way interaction tends to encourage the generation of new ideas to a greater extent than one-way communication. The use of feedback opportunities associated with mass media presentations, e.g. telephone calls giving reactions to television programs, allows the change advocate to determine responses to his proposals. Brainstorming and discussion groups are other ways to generate awareness and interest in the resolution of a problem.

Persuasive Tactics. Persuasive tactics are used most often by most advocates to convince others of the desirability of the product-solution to the problesm. They can be used under a wide variety of conditions with many different types of clients. For example, financial incentives may be used to persuade teachers to attend a meeting after school where they gain more information about the product. Or financial payment may be made to students to participate in a program on their own time which may later be presented to the entire student body. A common persuasive tactic is to secure the endorsement of the product by persons respected by the client. This type of persuasion can be quite effective since many times judgements are made on the strength of the client's confidence in the advocate of a new idea.

Coercive Tactics. Many professional persons tend to reject the use of coercive tactics. The use of deadlines or mandates tend to be offensive to these persons. Yet these procedures are common practice in educational agencies today. As a change advocate, you need to know the limitations and consequences of using these types of tactics. For example, some school employees use strikes or boycotts to call attention to objections they have about the product being installed. Whenever teachers, or others are forced to take sides on an issue, it tends to divide the group and promote differences of opinion. Such actions can have negative consequences for obtaining consensus on future issues of concern to the total educational faculty.

There are times when the use of coercive tactics is necessary. Participants in an innovation need a realistic picture of what is expected of them in task assignments. I don't know of any way to manage an innovative program without specifying deadlines and product due dates! Occasionally, a staff member or project director may not perform well in his or her duties. It may become necessary to replace that person with someone who is better qualified to promote the product.

The use of change tactics is not an exact science. It depends upon the skill and ability of the change advocate to perceive others and accurately judge reactions to product characteristics and implications. The installation of an agreed-upon solution to a problem also requires judgement about the speed of acceptance of a change which is reasonable to expect from clients who are potential users of the product. With careful attention to the conditions of the situation and values of the client, it should be possible to formulate an effective change strategy.

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SECTION IV

Strategies for Funding Innovative Projects

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(The allocation, dispersement, and use of vocational education funds to produce program innovation will be discussed in this section. Particular attention will be focused on strategies to be employed at three critical decision points: (1) the initiation of innovation, (2) the maintenance of innovations once they become established, and (3) the innovative expansion and/or improvement of established programs.)

Vocational education programs in the United States have a long and successful history in the use of educational funds to produce innovation. There will, however, be some adjustments and changes necessitated in the allocation, dispersement, and use of monies for this purpose over the next several years. The following conditions and factors will play a major role in bringing about these changes:

1. Innovation is becoming increasingly more expensive to create while the dollars available are not increasing at a proportionate rate.

2. Legislative decision-makers and others who disburse educational funds are becoming increasingly more insistent that agencies and institutions using such money for innovative purposes be held accountable for the long-range as well as short-range outcome of such expenditures.

3. The federal administration has already evidenced a strong commitment to the use of federal vocational education funds for purposes related to innovation, change, and improvement as opposed to the maintenance of established programs.

4. Local communities are rapidly reaching the "breaking point" in "squeezing" educational tax dollars out of their constituents. This problem is particularly critical in large urban areas.

5. Social problems affecting vocational education programs are beginning to intensify in scope and nature. The growing unemployment rate, shortened work day and week, equality of employment opportunities for females and minorities and others call for a revised strategy and approach to the funding of innovation.

The presentation which follows may appear to be theoretical and rather futuristic at times. This is because little time will be spent in reviewing and commenting on the present state of the art in funding innovations. Instead, projections and predictions will focus on helping practitioners identify areas needing change and the preparation necessary for meeting such change.

Funds to produce innovation are generally available from four sources: (1) federal government, (2) state government, (3) local government, and (4) private enterprise. Each source has its own unique qualities and characteristics.

Federal Funds are generally considered to be the most flexible and perhaps most readily used to produce innovation. That is, of course, within the confines of broad general categories. One of the negative aspects related to the use of federal source monies is the lateness of appropriation resulting in a delivery time which is frequently well into a project's starting time. Too often this limits their use in starting new and innovative programs to local educational agencies which are wealthy enough to carry the initial start-up from local dollars with the hope that they can later re-code federal dollars to cover these initial expenditures. Also, federal dollars cannot be stockpiled beyond one or two years from the funding date. This fact coupled with the year-to-year appropriation means that relying on federal support contains a certain element of risk. Federal financial audits are generally more rigorous than other agency audits.

State funds are nearly always appropriated for program maintenance purposes. Legislatures historically have been very conservative in authorizing the expenditure of state revenue funds for product innovation. These funds are usually available when a program begins early in the fiscal year. Most state funds cannot be carried over from one fiscal year to the next.

Local funds are nearly always in short supply. This mandates that they be used almost entirely for the maintenance of vocational education programs or building maintenance and/or construction. However, when available, this is an ideal source of innovative support since there is virtually complete flexibility of use and the funds are always available for use on a timely basis. Audits are generally internal to the system and external accountability is minimum.

Private funds are available on a limited basis from foundations and grants established by various private institutions. The track record of vocational education in this area has been generally not too good. One limiting factor in acquiring funds from private sources is that this usually requires the development of an elaborate and intricate proposal or plan. The proposal must then be presented by someone who has an "inside track" with the target grantor and may call for a sophisticated level of grantsmanship not yet developed in vocational circles. Private sources of funding are however desirable since they carry a high level of visability and results generally are widely disseminated. This is also a way for developing an improved level of public relations with business and industry.

The following are some internal operating principles, philosophies, and strategies which can be adapted to the funding of innovative vocational projects at various stages of development:

1. The initiation of innovative projects. The initiation of innovative projects has its beginnings in a well-planned and skillfully executed program for producing change. Funding is usually the last step in such initiation. Federal funds generally are the most readily available source for supporting change. One of the weaknesses in the use of federal innovative dollars in the past is that once the need for innovation in a given area was identified all local educational agencies were encouraged to apply for financial aid. As a result the limited fiscal resources were spread thinly over a large number of agencies. This tactic became known as the "carrot and stick" strategy. We are now reaping the negative effects of such a maneuver. In most cases, such blanket innovation was funded for only three years at which time all federal support was withdrawn. All too often the local educational agency could no longer support the program from current levels of funding and the innovation was dropped. Many sound and successful programs have been wiped out in a similar way.

   A suggested alternative to the "carrot and stick" approach is a system which uses federal innovation funds as "bait" for catching state dollars. Under this tactic, once the need for change or innovation has been identified a limited number of LEAs are identified by using the following criteria:

   A. Evidence of need is shown.

   B. A desire to cooperate in every way possible is shown by all concerned personnel.

   C. The site will present a high level of visability to state legislators and other key individuals.

   D. Basic program ingredients and resources needed to support and enhance the success of this innovation are present.

   After these sites have been chosen, state staff members assist target LEA personnel in the development of a project proposal. The completed proposal is then submitted to a review committee for recommendation to the proper authorities in the state education agency. After approval for conducting the project has been sucured, funding takes place.

   The underlying philosophy for funding such ventures should be that these locations are pilot or demonstration sites and must be supported to the highest level with federal funds in order to guarantee every possibe chance for success.

A rather rigorous plan for the monitoring and evaluation of these pilot/demonstration projects should be developed and executed. It is desirable to involve appropriate members of projected target funding sources, e.g., legislators, officers, etc. in the monitoring/evaluation activities.

A critical dimension in the planning for innovation is to include a projected strategy for continuing the funding beyond the initial trial period. In situations where federal dollars are used as "bait" this activity consists of the identification of "key" legislators and a well designed strategy for involving them in the project throughout its life-span.

The most difficult feat here is the projection involved in determining who the proper legislative members might be two, three, or even four years hence when state support for continuing the program must be sought. The following are several guidelines to consider in making projections:

A. Always include six or eight incumbent legislators on the team in order to cover errors in judgement about who might be an active legislator at the time decisions will be made.

B. Include largely freshmen legislators with full terms remaining or seasoned campaigners who have a good chance of being elected.

C. Select legislators who have a natural interest in education or who, because of some unique personal experience, are likely to be members of a legislative education committee.

D. Solicit the assistance of seasoned lobbyists who know politics and politicians in structuring your group.

E. Keep the committee bi-partisan to safeguard against a shift of political power in the legislative bodies.

F. Always clear such activity with the chief state school officer and make him/her aware of your motives.

G. Be prepared to accept the services of legislative aides as a substitute for busy legislators, but be certain that the legislators are completely informed about progress of the project.

H. Select legislators from the districts where pilot/demonstration projects are located to insure their interests. Other members should be selected from districts where a need for similar projects exist.

Forward planning will not insure the continuation of all such pilot/demonstration projects, but should greatly minimize the reduction of programs and failures which are being experienced under the present system.

2. The maintenance of innovative projects once they have become established. Aside from the need to provide sustained financial support for the maintenance of innovations, the second most critical need is follow-up. Follow-up in the form of supervision, support, encouragement, assistance in making decisions regarding needed adjustments, etc.

   This follow through activity should be a team effort which involves state level, intermediate level, as well as local level supervisory personnel. This activity should be provided for in the initial plan for producing the innovation.

3. The innovative expansion and/or improvement of established programs. The basis for such activity is a practical and realistic on-going program of evaluation. The results of evaluation activities should be carefully monitored by planners at the state and intermediate levels in order to determine the need for innovative expansion and/or improvement of established programs.

   The basic responsibility for funding innovative programs discussed under 2 and 3 above should fall to the respective state and local agencies.

   Innovative/change oriented programs are all best funded on the basis of a system of project proposals rather than on a basis of standard formula based allocations.

Much desirable and lasting change can be effected in vocational education by the proper planning and application of fiscal resources. Without a doubt the greatest single incentive for producing innovation is the offer of money to install the change. This fact in itself calls for a high degree of wise stewardship at all organizational levels.

SECTION V

STATEWIDE DIFFUSION NETWORKS: THEIR ESTABLISHMENT AND EVALUATION

by

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In the paper which Bill Hull prepared to accompany yesterday's program, he indicated that few states have set up a "network of demonstration sites for products." Today we want to treat the concept of "statewide diffusion networks" as encompassing any new product, idea, practice, or program which shows promise for improvement in vocational education.

The Dissemination and Resources Group of the National Institute of Education is favoring the establishment of federal policy to support "state network activities." Such networks would bring together the talents and resources of state, regional, and local education agencies and R & D organizations to assist schools in implementing new programs in response to local needs.

Overview of Concepts on Diffusion and its Assessment

For purposes of providing a basis for discussion, it is important to highlight some key concepts in diffusion and in the evaluation of diffusion efforts. In cases where the concepts have been covered previously, a little healthy repetition is in order!

First of all, three perspectives or models of the change process have been described extensively by Havelock (3). These three perspectives -- the Research, Development, and Diffusion (R D & D) Model; the Problem-Solving (P-S) Model; and the Social-Interaction (S-I) Model -- are explained briefly in Figure 1.

FIGURE 1

THREE MODELS OF THE CHANGE PROCESS

R D & D	Problem-solving	Social-interaction
1. Invention or discovery of innovation	1. Translation of need to problem	1. Awareness of innovation
2. Development (working out problems)	2. Diagnosis of problem	2. Interest in it
3. Production and packaging	3. Search and retrieval of information	3. Evaluation of its appropriateness
4. Dissemination to mass audience	4. Adaptation of innovation	4. Trial on a limited basis
	5. Trial	5. Adoption for permanent use
	6. Evaluation of trial in terms of need satisfaction	

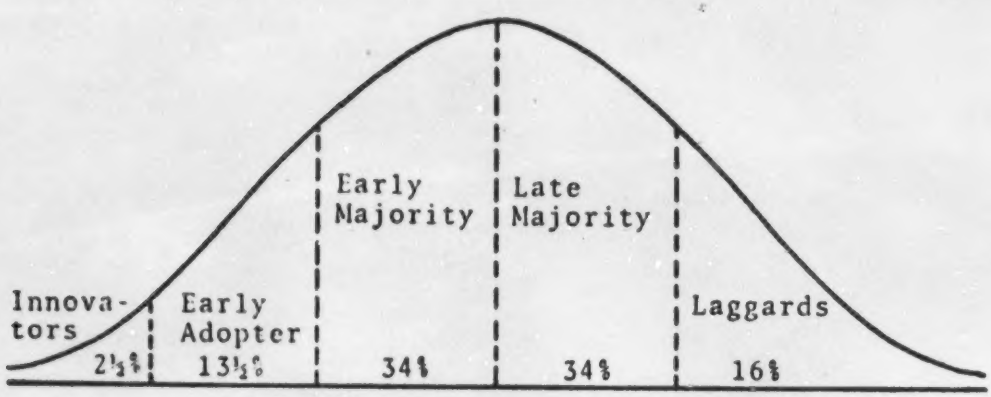
These perspectives on the change process are not mutually exclusive. For example, a local problem may be identified as a gap between existing vocational curricula and student needs (P-S Model). In order to update curricula, it may be necessary to conduct a research study of what the curricula should include, develop new curriculum materials, and disseminate them (R D & D Model). Once dissemination has occurred, teachers may become sufficiently aware of and interested in the materials, perhaps through inservice activities, that they ultimately decide to try out and then adopt the materials for regular use (S-I Model).

Another set of concepts on diffusion, presented earlier this week, deserve particular emphasis in the context of this paper. These concepts are the five adopter categories described by Rogers and Shoemaker (19). The relative amount of time required for individuals to adopt innovations is the basis for defining adopter categories (see Figure 2).

FIGURE 2

ADOPTER CATEGORIES BASED ON RELATIVE
TIME OF ADOPTION OF INNOVATIONS

(Rogers and Shoemaker, 1971)



Innovators make up 2½% of the population. They are the first to adopt innovations. Their predominant characteristic is one of venturesomeness, thriving upon the new and risky with little regard for what others may think.

Early Adopters, comprising 13½% of the population, are the next to adopt innovations after the innovators. A desire for respect from others is the compelling force behind their decisions to adopt innovations.

The early majority, making up 34% of the population, adopt new ideas just before the average person. They make up a decision to adopt an innovation very deliberately, after carefully viewing several others who have adopted it.

The late majority, comprising 34% of the population, are skeptical of new ideas and adopt them only after pressure from peers or economic necessity mounts.

Laggards, making up 16% of the population, are the last to adopt an innovation. They are highly traditional, relying upon the past as a point of reference. Of course, there are many innovations which they never adopt.

These adopter categories formed the basis for developing an instrument to measure the change orientation of vocational teachers. Change orientation is defined as an individual's predisposition or attitude toward change. It is reasonable to assume that the most highly change-oriented individuals are the most innovative, and vice versa. Evidence presented later in this paper supports this assumption and suggests the need for using the Change Orientation Instrument (COI) to identify and select change agents in vocational education.

Building the Statewide Diffusion Network

The mass of studies on how innovations are spread in education suggest a number of factors which are contrary to the bureaucratic nature of educational organizations. Among the factors needed to facilitate change in education are:

1) A system which supports individual professionals in change efforts, rather than one which supports the status quo.

2) A system which gives individual professionals the freedom to fail and try again.

3) A system which provides technical assistance, frequently from the outside agencies, to back up individuals' positive orientation to change.

4) A system in which change agents at various levels combine to form a peer team in pursuit of the same goals. Power and responsibility are shared.

5) A system in which change agents in each component have ready access to the change agents in all other components. There is no rigid "chain of command," but a cadre of change agents accessible to one another when needed.

6) A system which rewards the innovators.

To the degree that these factors are missing from planned change efforts, success will be hindered and resources will be ineffectively utilized. As a means of improving the diffusion of innovations in vocational education, an "un-bureaucracy" is proposed for development alongside the existing educational structures in states.

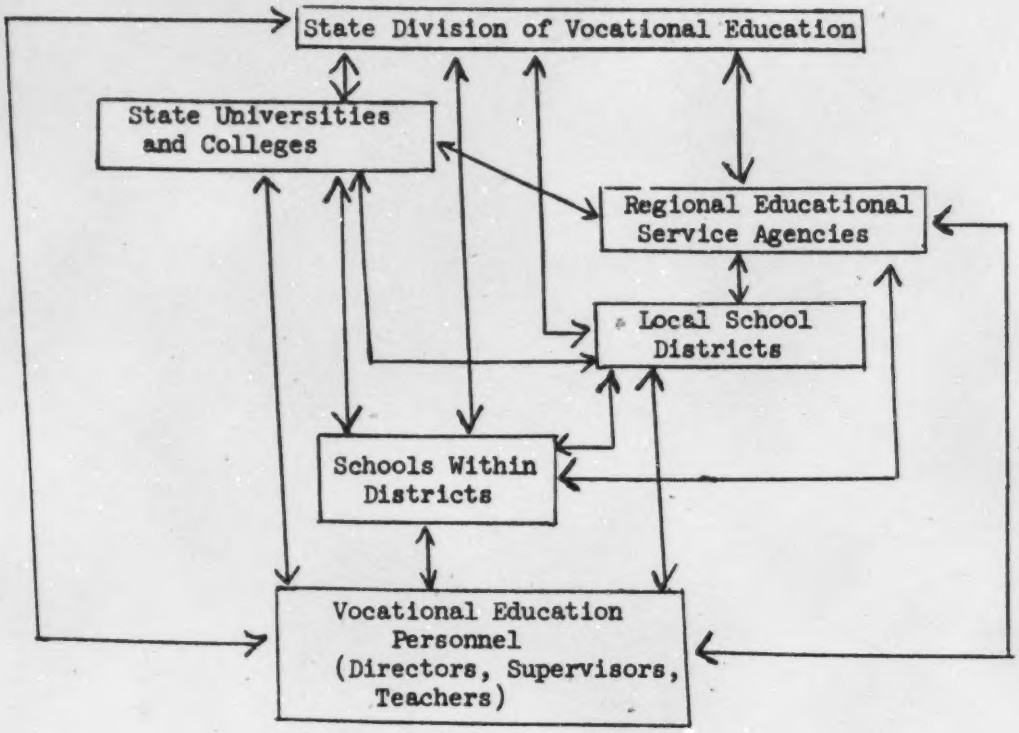
The "un-bureaucracy" will be referred to as a "Statewide Diffusion Network." Figure 3 depicts the desirable components of a Statewide Diffusion Network and the interrelationships among the components. Each component -- the State Division of Vocational Education, universities, regional educational service agencies, local school districts, schools within districts, and local vocational education directors, supervisors, and teachers -- should consist of a few highly selective, change-oriented leaders. No doubt such potential leaders already exist in each component, and need only to be selected and trained in the role of a change agent.

Astute observers of change may have a feel for recognizing change agents among a group, especially if the group consists of relatively few people. However, individual observations are risky in choosing change agents from groups in which all members are not well known to the observer.

Certainly for most if not all of the components in a Statewide Diffusion Network, it now appears useful to select change agents using the Change Orientation Instrument. Table 1 contains some sample items from the 21-item COI. Although the COI was developed originally for use among vocational teachers, it has since been slightly modified by other researchers for use among local and state administrators, teacher educators, and others.

FIGURE 3

DESIRABLE COMPONENTS [1] OF A STATEWIDE DIFFUSION NETWORK FOR VOCATIONAL EDUCATION


State Division of Vocational Education
State Universities and Colleges
Regional Educational Service Agencies
Local School Districts
Schools Within Districts
Vocational Education Personnel (Directors, Supervisors, Teachers)

[1] In each component, a small but highly selective group of change-oriented leaders should function as the change agents. These change agents in each component may work individually or as a group, depending upon the particular change effort. Also, the change agent may be responsible for (a) bringing about the change or (b) assisting others in bringing about the change, or (c) both!

TABLE 1

SAMPLE ITEMS FROM THE
CHANGE ORIENTATION INSTRUMENT

Item Number	Statement
1.	Schools can't do much to develop positive attitudes toward work.
2.	Vocational education can do little to alleviate the problems of disadvantaged people.
3.	I think there's no harm in starting occupational preparation for young school children.
4.	I find that individualized instruction using behavioral objectives is valuable in helping the student succeed.
5.	I accept the idea that individualized instruction using behavioral objectives allows students to experience success more often.
6.	I argue that increased emphasis on adult vocational programs would eventually reduce inner-city unemployment.
7.	I would greatly dislike being a member of a differentiated teaching team.
8.	I uphold the differentiated team teaching concept as permitting a natural exchange of ideas.
9.	I say that differentiated team teaching is asking too much of established teachers.

Table 2 contains an overview of eight studies in which the COI was used. The evidence from those studies is rather compelling in favor of the instrument's validity and reliability. If a state were to systematically administer the COI to all its vocational educators, an objective data base would then be available for selecting change-oriented change agents.

Once change agents are selected, it is essential that technical assistance be provided them via inservice activities to provide the needed operational skills for effecting change. Inservice activities should include workshops, guidebooks, and follow-up on-site assistance. Helping assure the success of the innovators and early adopters will provide impetus to the acceptance of change by the majority of observers.

Evaluating Innovative Efforts in Statewide Diffusion Networks

Evaluation of innovative efforts is a continuous process, beginning at the beginning and not at the end. Innovation is a very complex enterprise -- problems arise and decisions must be made throughout the process.

Therefore, evaluation is defined here as the process of delineating, obtaining, and providing information for decision-making. The decision-makers are the change agents in each component of a Statewide Diffusion Network, as well as those who are observing the change agents before acting themselves. Figure 4 depicts the flow of evaluation information between each stage of innovation (planning, development, installation) and the stages which adopters of innovations go through (awareness, interest, evaluation, trial, adoption).

Finally, nothing succeeds like success. When innovations in vocational education are satisfactorily implemented, future success is likely to come easier. In addition, valuable side effects of innovation may produce the following:

1) Use of the innovation to accomplsih broader purposes than originally envisaged;

2) Existence of publications designed to draw the attention of a wider audience to the innovation;

3) Improved attitudes or skills of the innovating group members which may affect their later innovativeness;

4) Spread or diffusion of the innovation to other systems;

5) Stimulation of innovation in similar areas of school practices;

6) Promotion or advancement of practictioners who have backed the innovation.

TABLE 2

OVERVIEW OF STUDIES USING THE CHANGE ORIENTATION INSTRUMENT (COI)

Study	Sample Type, Location and Size	Evidence Related to Validity of the COI	Reliability Coefficients for the COI
Adamsky	Trade and Industrial Education Teachers, Eastern Pennsylvania n = 394	Relationship between teachers' change orientation and adoption of practices of using behavioral objectives was significant (eta = .242, $p < .01$). Concluded, with supporting evidence and observations, that teachers studied were highly oriented toward change (pp. 108-109).	None reported
Jacobsen (1973)	All teachers - the Comprehensive Career Education Model cooperating schools, Atlanta, Georgia n = 522 in initial survey n = 60 experimental subjects	". . . the change orientation variable remained unchaged throughout the duration of the experiment. The change orientation scale is a relatively stable attitude measure . . ." (p.71)	.89 (K-R Formula 8) [This coefficient was calculated on a 10-item version of the COI, using Russell's (1972) original data. None was calculated form Jacobsen's data.]
Kester (1973)	Local administrators, secondary school teachers (all subjects and grade levels), state department of education staff members, teacher educators, state board members, advisory council members -- in Kansas and Ohio. n = 243	Through factor analysis, four "professional-organizational functioning styles" of educational practitioners were identified. These correlated with change orientation as follows:[a] a) dynamic professional bureaucrat ($r = .33$, $p .01$; $b = .26$, $p < .01$) b) adaptor-creator ($r = .21$, $p < .05$; $b = .15$, $p < .05$) c) impoverished practitioner ($r = .18$, $b = .16$, $p < .01$)	.92 (Cronbach's alpha) (Four of the 21 items in the COI were modified slightly to make them more generalizable to the sample in this study.)

cont'd.

OVERVIEW OF STUDIES USING THE CHANGE ORIENTATION INSTRUMENT (COI) cont'd

Study	Sample Type, Location, and Size	Evidence Related to Validity of the COI	Reliability Coefficients for the COI
Lukers (1973)	Post-secondary vocational-technical teachers in Georgia n = 737 in initial survey n = 32 experimental survey	Relationships between teachers' change orientation and their students' attitudes were significant in the following areas: a) student attitudes toward classroom human relations ($r = .43$, $p<.05$) b) student attitudes toward meaningfulness of instruction ($r = .42$, $p<.05$).	.88 (Cronbach's alpha) (based on 737 COI scores)
McCutcheon (1973)	Teacher educators, state department of education staff members, administrators in large city school districts -- total sample from 45 states n = 65	a) "The scores on (the change orientation) scale were skewed to the high side of the scale reflecting the relative high orientation to change manifested by the (sample)." (p.68) b) "The participants tended to be (1) highly change oriented, (2) open-minded as opposed to being dogmatic in their views, (3) internally controlled as opposed to being controlled by external forces, (4) cosmopolite versus localistic and (5) liberal as opposed to conservative in their composite attitudes." (p.71)	.77 (split-half)
Meehan (1974)	Instructors in two area vocational-technical schools in Pennsylvania n = 21	Selected teachers from one school who had been "early adopters" of an innovative approach to vocational curricula -- consisting of individualized instruction, modularization, and behavioral objectives -- had significantly higher change orientation scores ($p<.05$) than the faculty of another school who were about to receive in-service instruction regarding the innovative approach. This latter group was described as consisting of both "early adopters" and "laggards," based upon change orientation scores.	None reported

cont'd.

OVERVIEW OF STUDIES USING THE CHANGE ORIENTATION INSTRUMENT (COI) cont'd

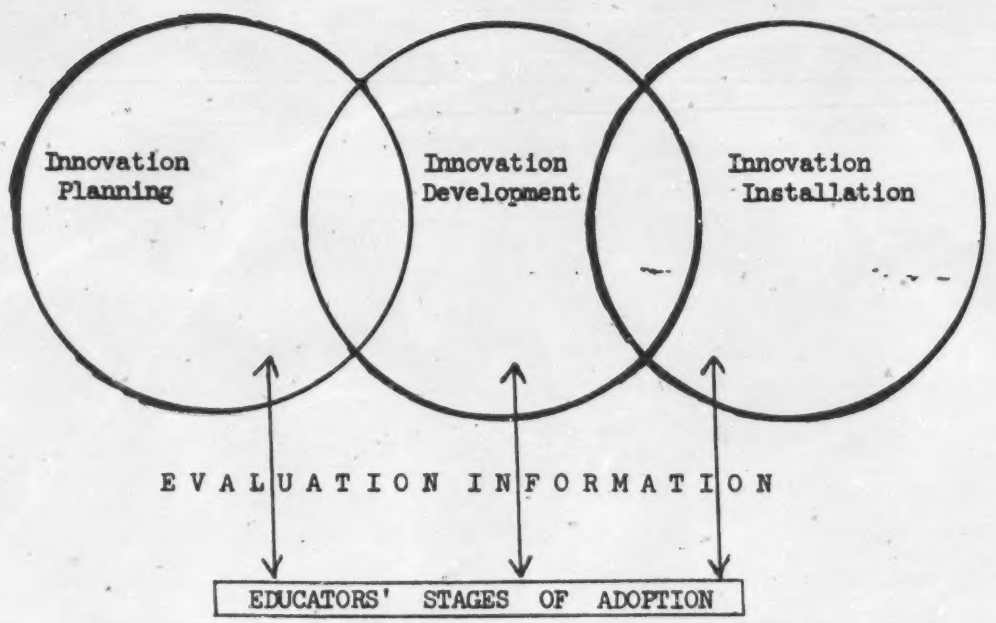
Study	Sample Type, Location and Size	Evidence Related to Validity of the COI	Reliability Coefficients for the COI
Mendelson (1973)	Secondary school teachers of record-keeping -- total sample from 9 states n = 18	Rather inconclusive and the author recommends the study be replicated using a "much more rigorous design." (p.98) Reported a "near significant" positive relationship between total years teaching experience and change orientation, but a significant negative relationship ($r = -.59$, $p < .05$) between total years teaching experience and instructor willingness to adopt innovations.	None reported
Tardanico (1974)	Occupational education teachers and/or department heads in vocational schools, junior high schools, and in comprehensive high schools in Massachusetts n = 132	Using the act of proposal writing as the major criterion of innovativeness to improve, expand, or create new occupational education programs, proposal writers had significantly higher change orientation scores ($p < .10$) then non-proposal writers. Also, scores on the COI were significantly correlated ($p < .01$) with a number of variables, judged to be related to change receptivity, contained in a "Demographic Descriptor Scale" developed in this study.	None reported

[a] r = product-moment correlation coefficient; b = standardized regression coefficient.

V-10

FIGURE 4

EVALUATING THE DIFFUSION OF INNOVATIONS



Awareness → Interest → Evaluation → Trial → Adoption

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